The following CALCULATIONS *and* PROJECTIONS *of the* Tranſit *of* Venus *were laid before the Society agreeable to their Dates, and claim a Place here, as it may be of uſe, in various Reſpects, to compare them with the* actual Obſervations *of the* Tranſit, *afterwards made in this Province; and from thence to collect the Differences between Computation and Obſervation, together with the Cauſes of thoſe Differences.*

PROJECTION *of the enſuing* TRANSIT *of* VENUS *over the* SUN, *which is to happen* June 3d, 1769. *By* David Rittenhouſe, *A. M.*

ELEMENTS *from* Halley's *Tables, for Lat.* 40° *N. & Long.* 75 *W. from* Greenwich.

Communicated by Revd. Dr. Smith, June 21, 1769.

1769, June 3d, at 3 h. P.M Sun's place, 2^{s}. 13°. 21′. 37″
Heliocentric place of ♀ in ecliptic, 8. 13. 18. 11 Lat. ♀ N. 4′ 29″

☉ *à* ♀ 3′ 26″

At 8 Hours P. M. Sun's Place, 2^{s}. 13°. 33′ 35″
Place of Venus 8. 13. 38 .2 Lat. ♀ N. 3′ 18″

♀ *à* ☉ 4. 27

Log. ☉ *à* ⊙ 5.006568 Diſtance 10152385
Log. ♀ *à* ⊙ 4.861095 Diſt. 7261652
Log. ♀ *à* ☉ 4.460858 Diſt. 2889733
Diff. Log. .400237

Apparent Semidiameter of ⊙ 15′. 51″ = 15′, 85
Apparent Semidiameter of ♀ - - 0′, 5719
Diminiſh'd * Semidiam. of ⊙ 6′,3065 } in Ratio of 7262 to 2889
Diminiſh'd Semidiam. of ♀ 0, 2276 }

Beginning of the Tranſit, 2h. 16′
End 8. 50

But ſuppoſing the Sun's Horizontal Parallax but 8 Seconds, then for the above Lat. and Lon.

Firſt External Contact will be at 2h. 11min.

* *The Diameters were diminiſhed to anſwer the Scale to which the Latitude of Venus was ſet off in the Projection.*

See the *Projection*; *Plate*, I.

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